

Miniature optical communication transceiver with imbedded ranging and Doppler measurement capabilities

Completed Technology Project (2014 - 2015)



Project Introduction

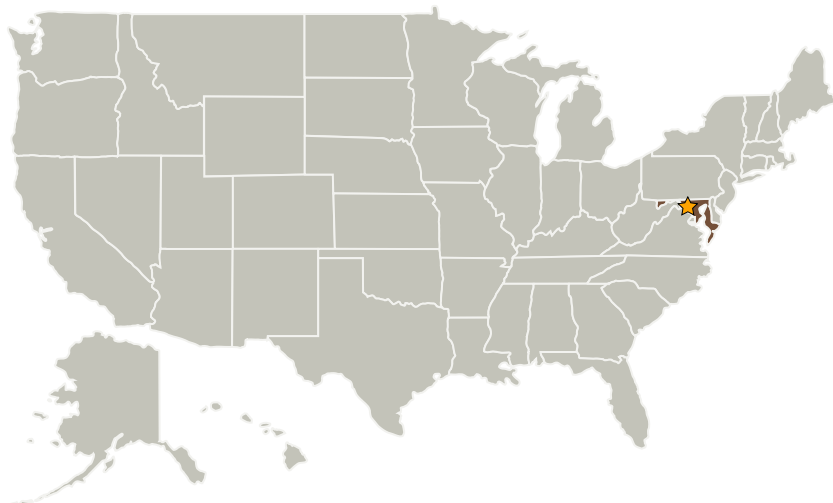
We propose to develop a miniature optical communication transceiver with imbedded ranging and accurate Doppler capabilities.

We demonstrated a high precision ranging (distance) and range rate (speed or Doppler Shift) measurement system over high speed laser communication link. A complete bench top optical communication system was built, which includes a ground terminal and a space terminal. We have demonstrated a high precision range rate measurement and absolute ranging

Anticipated Benefits

It will benefit formation fly, navigation and ranging.

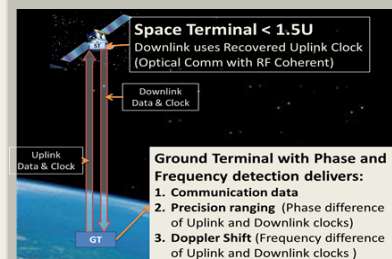
Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Goddard Space Flight Center (GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations

Maryland



Miniature optical communication transceiver

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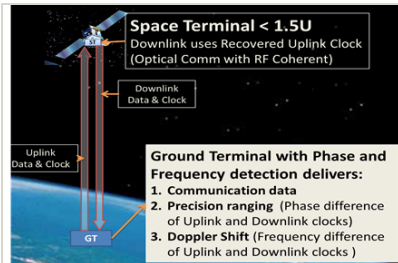
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Images



Miniature optical communication transceiver

Miniature optical communication transceiver

(<https://techport.nasa.gov/image/16694>)

Links

NTR 1400852195
(no url provided)

Project Website:

<http://aetd.gsfc.nasa.gov/>

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Innovation Fund: GSFC CIF

Project Management

Program Director:

Michael R Lapointe

Program Manager:

Peter M Hughes

Project Manager:

Terence A Doiron

Principal Investigator:

Guangning Yang

Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
 - └ TX05.1 Optical Communications
 - └ TX05.1.6 Optometrics